

US EPA ARCHIVE DOCUMENT

Welcome to the US EPA's webinar on using compost as a stormwater best management practice. January 8, 2009



Agenda

- Information about the call
- A quick introduction to soils and compost
 - Chris Newman, US EPA
- Sustainable Erosion Control
 - Amy Sausen, The Bruce Company
- Using Compost for Erosion & Stormwater Management
 - Dwayne Stenlund, Turf and Erosion Control Engineering Unit MN/DOT

Notice

This presentation has been provided as a part of the U.S. Environmental Protection Agency's series of webinars on using compost as a stormwater best management practice. This document does not constitute EPA policy. Mention of trade names or commercial products does not constitute endorsement or recommendation for use. Links to non EPA web sites do not imply any official EPA endorsement of, or a responsibility for the opinions, ideas, data or products presented at those locations or guarantee the validity of the information provided. Links to non-EPA servers are provided solely as a pointer to information that might be useful to EPA staff and the public.

A few things worth mentioning

- Mute your phone during the call
- Do not place the call on hold
- Send you questions to the moderator; do not ask them during the call.
- This call is being recorded.

A few things worth mentioning

- You will be sent a link to a recording of the call tomorrow. It will be good for 30 days.
- We expect the call to last 1 to 1 ½ hours. Please feel free to drop off early if you need to.
- Presentations, and other resources, for these calls will be posted at www.drop.io/compostbmpcalls

Asking Questions During the Call

- The speakers will answer a few selected questions at the end of their presentation
- Please do not ask questions during the presentation.
- How to post questions:
 - WebEx - use the chat box under the participant box on the right side of the screen
 - If you are following along with downloaded presentations, please email questions to compostquestions@drop.io.
- The moderator will ask the speaker the question.
- Additional questions may be answered by the speaker after the call has ended.
 - An email will be sent when these are posted and available.

Quick An Introduction to Soils and Compost

**Using Compost as a
Stormwater Best Management Practice**

Chris Newman
EPA Region 5

Introduction to Soils

- Soil quality is key to plant survival
- There are many factors that can effect soil quality. One that we are focusing on today is:
 - Organic matter content (OM)
- Soils can be degraded due to:
 - Erosion
 - Overuse/nutrient depletion
 - Disturbance
- The less degraded the soil, the more productive it can be

Organic Matter Content

- Organic matter is the fraction of the soil derived from plants, animals, and microorganisms
 - Raw plant residues or microorganisms
 - Active OM
 - Stable OM (humus)
- Functions of OM:
 - Stores nutrients
 - Promotes good soil structure
 - Maintains tilth
 - Minimizes erosion
- 'Ideal' soils contain about 5% organic matter

Organic Matter Content of Soil

- Organic matter content can effect:
 - Cation exchange capacity
 - pH
 - Soil bulk density
 - Water holding capacity
 - Plant diseases/pathogens
 - Susceptibility of soils to erosion
- Building soil OM with compost can help improve these soil characteristics which can lead to improved plant growth

What is Compost?

- Compost is aerobically decomposed organic materials
- Organic materials can be:
 - Yard wastes
 - Food wastes
 - Animal manure/Agricultural wastes
 - Biosolids
- The composting process uses time and temperature to:
 - Degrade the organic materials create a product indistinguishable from the original
 - Kill pathogens and weed seeds
 - Make the OM in the final product more stable than it originally was

Benefits of Compost in Stormwater BMPs

- Compost retains a large volume of water
 - Prevents or reduces rill erosion
 - Reduces runoff volume
 - Promotes establishment of vegetation
- Compost improves downstream water quality by retaining/adsorbing pollutants
 - Heavy metals, nitrogen, phosphorus, oil and grease, fuels, herbicides, and pesticides
 - Nutrients and pollutants are decomposed by naturally occurring microorganisms

Benefits of Compost in Stormwater BMPs, cont.

- Compost improves soil structure and nutrient content
 - Reduces need for chemical fertilizers, pesticides, and herbicides
- Compost-based BMPs remove as much or more sediment and pollutants from stormwater as traditional perimeter controls, such as silt fence
 - Allow a larger volume of clear water to pass through
- Think of the compost BMPs as another tool
 - They can be used with other stormwater BMPs to meet your project needs.

Compost Quality

- Use sanitized, mature compost with no identifiable feedstock constituents or odors
- Must meet all local, state, and federal quality requirements
- U.S. Composting Council certifies compost products
 - Seal of Testing Assurance program
 - Products certified under this program have a standard product label for comparison of products
- Some composts contain metals and/or nutrient concentrations that are higher than topsoil; these do not result in higher stormwater concentrations

Compost Quality, cont.

- American Association of State Highway Transportation Officers (AASHTO) standards
 - Quality and particle size specifications for compost to be used in compost blankets, compost filter berms, and vegetated compost filter socks
- Quality and particle size specifications for unvegetated compost filter socks provided in EPA's BMPs - <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>
 - Enter 'compost' into the search line
- Many states may have compost quality regulations, or regulations that effect the use of compost in this application. Check with them as part of your planning to use these BMPs.